Index

to

1934 Transactions

A

P	age
Aging and Solution Heat Treatment for Aluminum Alloys Air Craft, Effect of Elevated Temperatures on Aluminum Alloy Cast-	55
ings for	48
Alloy Irons for Permanent Molds	442
Alloy Ladle Additions on Depth of Chill in Cast Iron, Effect of	518
Alloying Elements on Cast Iron, Effects of	712
Alloying Malleable Iron with Copper	212
of Aluminum	48
Aluminum Alloys, Effects of Normalizing Treatment of	67 54
Aluminum Alloy Castings on Ageing at Various Temperatures, Hardness and Growth of	70
Aluminum Alloys Used in Air Craft, Effect of Elevated Temperatures	49
on the Strength of Certain	48
	380
Analysis of Sea Coal in Sand Heaps	
В	
Barium Compounds Added to Ganister for Refractory Linings Bearing Bronze, Phosphorus and Zinc Influence on Shrinkage of	
Bibliography:	
Deoxidation and Degasification of Red Brass and Bronze	160
Fluidity of Cast Iron.	
Polishing Cast Iron for Microscopic Examination.	
Sand Fineness Tests	
Solidification and Contraction in Steel Castings	470
Boilers, Investigation of Composition of Common Cast Iron for	
Brass:	
Cost of Electric Furnace Refractory Linings for Melting	580
Deoxidation and Degasification of Yellow	
Smoke Arrestor for Cupola Melting	
Brass and Bronze:	
	169
	166
Incipient Shrinkage in Red	
Brass Melting in a Cupola Furnace	737
Brass Melting in a Cupola Furnace	
Brass Melting in a Cupola Furnace	737 727

Index

to

1934 Transactions

A

P	age
Aging and Solution Heat Treatment for Aluminum Alloys Air Craft, Effect of Elevated Temperatures on Aluminum Alloy Cast-	55
ings for	48
Alloy Irons for Permanent Molds	442
Alloy Ladle Additions on Depth of Chill in Cast Iron, Effect of	518
Alloying Elements on Cast Iron, Effects of	712
Alloying Malleable Iron with Copper	212
of Aluminum	48
Aluminum Alloys, Effects of Normalizing Treatment of	67 54
Aluminum Alloy Castings on Ageing at Various Temperatures, Hardness and Growth of	70
Aluminum Alloys Used in Air Craft, Effect of Elevated Temperatures	49
on the Strength of Certain	48
	380
Analysis of Sea Coal in Sand Heaps	
В	
Barium Compounds Added to Ganister for Refractory Linings Bearing Bronze, Phosphorus and Zinc Influence on Shrinkage of	
Bibliography:	
Deoxidation and Degasification of Red Brass and Bronze	160
Fluidity of Cast Iron.	
Polishing Cast Iron for Microscopic Examination.	
Sand Fineness Tests	
Solidification and Contraction in Steel Castings	470
Boilers, Investigation of Composition of Common Cast Iron for	
Brass:	
Cost of Electric Furnace Refractory Linings for Melting	580
Deoxidation and Degasification of Yellow	
Smoke Arrestor for Cupola Melting	
Brass and Bronze:	
	169
	166
Incipient Shrinkage in Red	
Brass Melting in a Cupola Furnace	737
Brass Melting in a Cupola Furnace	
Brass Melting in a Cupola Furnace	737 727

1	Page
Bronze:	
Bibliography on Deoxidation and Degasification of Red Brass and. Committee Report on Deoxidation and Degasification of Red	
Brass and	
Phosphorus and Zinc Influence on Shrinkage of Bearing Bronze Bushings, Porosity in Leaded	311
C	
Carbon Content and Silicon on Depth of Chill, Effect of	514
Carbon Control in Producing High Test Cast Iron	
Carbon Influence on Fluidity of Cast Iron	
Carbon Steel, Specific Volume of	465
Cast Carbon Steel, Free and Unhindered Contraction of	449
Casting Handling Equipment	573
Casting Temperature Control in Melting Yellow Brass	180
Cast Iron:	
Alloying Copper with Malleable	212
Bibliography on Fluidity of	632
Carbon Saturation of Cast Iron in Cupola Practice	
Chilling Properties of	
Cupola High Test.	
Desulphurizing Cupola	
Determination of Yield Strength of	
Discussion—High Chromium	
Discussion of High Test.	756
Effects of Alloy Ladle Additions on Depth of Chill in	518
Effects of Alloying Elements on	712
Effects of Chromium on	728
	7
Effects of Increasing Silicon and Section on Physical Prop-	
erties of	722
Effects of Molybdenum on Effects of Nickel on	
Effects of Section Thickness on	
Endurance Limits of High Test535,	
Fatigue Tests of High Strength	
Fluidity of	
Heat Resistance of	79
Impact Tests of	76
Important Purpose of Specifications for	478
Influence of the Form and Amount of Graphite on the Tempering Quality of	
Manufacture of High Test	705
Mechanical Properties of Copper-Malleable	215
	94
Migra	
Mixing Ladles and Forehearths for	2
Precipitation Hardening in Copper Malleable	222
Refractories for Electric Furnaces Producing Special Relation of Section Size, Silicon Content and Copper Content on	917
	213
Rupture and Mechanical Strength of Gray	

	age
Shear Test for	718
Steadite Formation in	90
Structure of	708
Study of Effect of Surface-Volume Relations of	
Symposium on Testing	
Tensile Test Bar for	
Testing Expansion of	80
Torsion Impact Test for	479
Cast Iron Compression Test Apparatus	531
Cast Iron Cylinder Liners, Heat Treated Gray	129
Cast Iron Data, Stress-Strain Diagram of	532
Cast Iron for Boilers, Investigation of the Composition of Common	71
Cast Iron for Microscopic Examination, Selection of a Suitable Method	
of Polishing	289
Cast Iron for Permanent Molds	
Cast Iron Specimens, Discussion of Polishing	
Cast Iron Specimens, Etching Malleable	
Cast Iron Step Bar and Chill Test Results	
Cast Iron Structure of Permanent Mold Irons	437
Cast Iron Test Bars	477
Effect of Bar Diameter on Tensile Strength	495
Horizontally and Inclined	490
Horizontally and Vertically	
Pouring Rate for	
Transverse Strength	
Cast Iron Test Bars and Castings, Correlation of Physical Properties	
of Separately Cast	
Cast Irons for Permanent Molds, Alloys	
Cast Irons with Varying Sections, Effects of Various Alloying Ele-	
ments on	
Charcoal in Nonferrous Foundry Melting	
Chill Castings, Effects of Copper on Graphitization of	
Chill Test Results, Cast Iron Step Bar and	510
Chill Tests, Practical Applications of	520
Chill Tests of Cast Iron, Discussion	523
Chilling Properties of Cast Iron	
Chills, Internal and External for Steel Castings	
Chills for Steel Castings, Use of	
Chromium Cast Iron, Effects of	
Chromium Cast Iron, High.	
Clay Content of Molding Sand as Affecting Flowability	
Clay Substance Determination in Fineness Tests of Sands	
Clays From Different Sources, Properties of	
Combined Carbon and Chill Depth, Relation of	
Committee Report on Deoxidation and Degasification of Red Brass	
and Bronze	
Comparison of Various Methods for Polishing Cast Iron	
Compression Test Apparatus for Cast Iron	
Contraction and Solidification in Steel Castings	449
Copper, Effects of Oxygen in Melting	161
Copper in Malleable Iron, Effect of	
Copper on Graphitization in Chill Castings, Effects of	227
Cores for Steel Castings	
Cores for Steel Castings to Avoid Porosity	359
Costs of Fuels for Melting Nonferrous Metals, Analysis of266	
Costs of Materials Handling	
Costs of Refractories for Electric Furnaces Producing Special Irons	
Costs of Defractory Linings for Floating Frances Melting Press	500
Costs of Refractory Linings for Electric Furnaces Melting Brass	110
Crook's Elutriator Sand Fineness Test	110
Crucible Melting of Nonferrous Metals, Modern Equipment in	200

n-a	0
Cupola Forehearths Cupola Furnace for Melting Brass. 73' Cupola High Test Cast Iron. 74' Cupola Irons for Permanent Molds, Tests of 44' Cupola Slagging.	1 7 5 1
Cylinder Heads: Cast Aluminum Alloy	1
D	
Deflection and Transverse Load Values of Cast Iron Test Bars. 49 Degasification and Deoxidation of Nonferrous Casting Alloys, Symposium on. 15 Dendritic Formation in Hard Iron for Malleable Castings. 9 Deoxidizers, Solubility of Oxygen in Steel as Affected by 32 Design of Contraction Bar for Testing Cast Steels. 45 Design of Molds for Permanent Mold Castings. 43 Design of Steel Castings. 68 Some Questions Involved in 238, 25 Desulphurizing Cupola Iron 1 Direct Arc Furnaces for Special Irons, Refractories for 58 Directional Solidification of Steel Castings 23 Dry Sand and Skin Drying Mold Practice for Steel Castings 34	2 4 7 1 2 0 3 1 2 7
E	
Elutriator Sand Fineness Method, Crook's	5 7 4 9 9 5 3
F *	
Facing Sands for Steel Castings	5 8 9 4 4 1 1 8
Fluidity of Cast Iron: A Contribution to the Study of	7

Page
Foundry Conveying Equipment, Selecting. 565 Foundry Equipment, Standardization of 643 Foundry Maintenance 633 Fuel Oil Furnace for Melting Nonferrous Metals. 269 Fuels for Melting Nonferrous Metals, Costs of 266, 276 Furnace Atmosphere in Melting Nonferrous Casting Alloys, Effects of 157 Furnace, Melting Brass in a Cupola Type. 737
G
Gas Formation in Molds
н
Hardness and Graphite Content of Cast Irons, Determination of
Impact Tests of Cast Iron. 76, 479 Inclusions in Steel for Castings. 21 Indirect Arc Furnace Refractories for Special Irons. 579 Inspection of Foundry Equipment. 640 Iron Oxide in Acid Open-Hearth Steel. 22 Iron Oxide in Basic Electric Steel. 38
L
Ladle Linings as Causes of Porosity in Steel Castings. 384 Leaded Bronze Bushings, Porosity in. 311 Liners, Heat Treated Gray Iron Cylinder. 129 Linings for Electric Furnaces for Special Irons. 580

М

P	Page
Machines for Permanent Molds	430
Malleable Cast Iron:	
Ferrite in	98
Metallography of Ferrite in	94
Precipitation Hardening in Copper	222
Temper Carbon Origination in	96
Malleable Cast Iron Specimens, Etching	99
Malleable Iron:	
	000
	226
Discussion of Tests of	410
Malleable Iron Test Bars, Cause of the Incompatibility Occasionally	410
	407
Malleable Iron With Copper, Alloying	212
	516
Manganese Influence on Fluidity of Cast Iron	
Manganese Steel, Austenitic	693
Materials Handling Equipment	
	215
	364
	$\frac{161}{271}$
	751
Melting Practice for Aluminum Alloys for Air Craft	53
Melting Practice for Producing High Chromium Cast Iron	280
Methods for Determining Amounts of Sea Coal in Heap Sand	
Metallography of Ferrite in Malleable Cast Iron	94
Microscopic Examinations, Bibliography on Polishing Cast Iron for	307
Migra Iron	707
	570
Mixing Ladles and Forehearths for Cast Iron	2
	572
	453
Mold Wash Defects in Bronze Castings	315
Molds:	
Gas Formation in	552
Investigation of Metal Currents in Bronze Bushings	313
Molds for Steel Castings, Permeability of	
Molding Problems of Steel Castings	
Molding Sand, Flowability of	
Molybdenum Effects on Cast Iron	723
N	
Nickel Effects on Cast Iron	723
Nonferrous Castings Alloys:	
Discussion on Deoxidation and Degasification of	191
Effects of Furnace Atmosphere in Melting	
Hydrogen Unsoundness in	163
Symposium on Deoxidation and Degasification of	152
Nonferrous Melting Furnaces, Refractories for	

	Page
Nonferrous Metals: Charcoal As a Deoxidizer of. Cost of Fuels for Melting. 266, Discussion—Melting Gases in	276 278 316
Non-Metallic Elements in Metals, Principles Governing Solubility of Normalizing Treatment for Aluminum Alloy Castings	
0	
Oil-Burning Crucible Furnace Installation for Nonferrous Melting Open-Hearth Steel, Silicon Reduction in Acid	
Р	
Permanent Mold Castings. Permeability of Molds for Steel Castings. Phosphorus and Section on Physical Properties of Cast Iron, Effect of Increasing Phosphorus Effect on Fluidity of Yellow Brass Casting Bronze. Phosphorus Effect on Fluidity of Cast Iron. Physical Chemistry of Steel Making. Pig Iron for High Test Cast Iron, Use of Low-Carbon. Pin Holes in Steel Castings. Porosity in Leaded Bronze Bushings. Porosity in Steel Castings. Pouring Equipment, Continuous. Pouring Rate for Cast Iron Test Bars. Pouring Rates for Typical Permanent Mold Castings. Pouring Temperature and Pouring Design for Steel Castings. Pouring Temperatures and Deoxidizers on Physical Properties of Yellow Brass, Effects of. Precipitation Hardening in Copper Malleable Cast Iron. Properties of Heat Treated Cylinder Liners.	357 723 320 177 596 21 752 356 311 , 394 569 489 433 255 511 182 222 281
R .	
Rammed Linings Used in a Cupola for Melting Brass	
Red Brass and Bronze: Bibliography on Deoxidation and Degasification of Committee Report on Deoxidation and Degasification of	
Refractories: Cupola Forehearths Electric Furnaces Producing Special Iron. Electric Melting of Steel. Nonferrous Melting Furnace Rammed Linings Used in a Cupola Melting Brass. Repeated Stress Tests of High Test Cast Irons.	577 585 271 738
	301
Sand: Comparison Between Washed and Unwashed Samples of Reclaimed Steel Flowability of Molding.	351

Sand as Affecting Flowability, Clay Content of Molding Sand Conditions Affecting Porosity in Steel Castings Sand Fineness Tests, Bibliography on Sand for Testing Contraction of Steel Castings Sand Grain Size from Casa Grande Hydrometer, Chart for Calculating Sand Handling Equipment	386 127 452 452 452 452 452 452 452 452 452 452
Standardization of Foundry Equipment	643 90
Steel:	
Austenitic Manganese Contraction of Plain Carbon Iron Oxide in Basic Electric. Refractory Linings for Electric Melting of. Silicon Reduction in Acid Open-Hearth. Sources of Gases in Specific Volume of Carbon.	460 38 585 30 332
Steel Castings:	
Bibliography on Solidification and Contraction of. Chills Internal and External for. Controlled Directional Solidification of. Cores for Directional Solidification by Mold Reversal in Producing. Discussion on Controlled Directional Solidification of. Discussion of Porosity in. Discussion on Solidification and Contraction of. Dry Sand and Skin Mold Practice for. Facings	254 237 676 240 258 394 471 346 685 679

	Page
Heat Treatment Effects on Mild	691
Influence of Aluminum in Preventing Porosity and Producing In-	20.2
clusions in	
Mechanics of Porosity in	
Need for Research on.	674
Pin Holes in	
Porosity in323, 339, 364,	
Pouring Temperature and Pouring Design for	
Relation of Metal Temperature to Pouring Speeds for	
Sand Conditions Affecting Porosity in	
Sand Requirements for	
Solidification and Contraction in	
Treatment of Feed Heads for	
Steel Casting Practice	
Steel Casting Industry in Great Britain	672
Steel for Castings, Inclusions in	21
Steel Foundry Equipment Maintenance	
Steel Foundry Foreman in Preventing Porosity, Function of Steel Foundry Sand, Comparison Between Washed and Unwashed	375
Samples of Reclaimed	351
Steel Making, Some Problems of the Physical Chemistry of	21
Steel to Avoid Porosity in Castings, Preparation of	
Stress-Strain Diagram of Cast Iron Data	
Symposium on Deoxidation and Degasification of Nonferrous Casting	910
Alloys	
T	
· ·	
Tapping Cupola Forehearths	15
Teapot Ladles for Desulphurizing Cupola Iron Temper Carbon Origination in Malleable Cast Iron	11 96
Tensile Test Bar for Cast Iron	717
Tension Specimens for Malleable Iron, Method of Casting	
Test Bars:	
Aluminum Alloy Castings	54
Cast Iron477,	
Malleable Iron	
Test Bar Design on Tensile Strength, Effect of	
Test Specimens for Testing Fatigue of Cast Iron	
Testing Cast Iron, Symposium on	477
Testing Expansion of Cast Iron	
Testing Flowability of Molding Sand, Equipment for	201
Tests of Sands and Clays, Comparison of Fineness	
Transverse Load and Deflection Values of Cast Iron Test Bars	
Transverse Strength of Gray Iron Test Bars	485
V	
Vibrating Shakeout Screens	570
У	
	4.00
Yellow Brass, Deoxidation and Degasification of	
Viold Strength of Cast Iron Determination of	

Authors' Index

to

1934 Transactions

P	age
ALCACER, J. N.—The Work of Rupture and the Mechanical Strength of	
Gray Cast Iron	655
ALVIN, W. CMelting Nonferrous Alloys in a Cupola Type Furnace.	737
APTEKAR, R. E.—Sea-Coal Analysis as Applied to Black Sand	543
BATTY, G.—Controlled Directional Solidification	
BATTY, G.—The Relation of Molds and Cores to Porosity in Steel	
Castings	
BERGER, RA Contribution to the Study of Fluidity of Cast Iron	
Blewett, J. B.—The Properties of Clays from Different Sources	418
Briggs, C. W. and Gezelius, R. A.—Studies on Solidification and Contraction in Steel Castings—II—Free and Hindered Contrac-	
	440
tion of Cast Carbon Steel	440
	075
Porosity in Steel Castings	
DIETERT, H. W. AND VALTIER, F.—Flowability of Molding Sand	
Eddy, W. P., Jr.—Heat Treated Gray Iron Cylinder Liners	129
Ellis, O. W.—Deoxidation and Degasification of Red Brass and	
Bronze	160
Evans, G. S.—The Forehearth as Used in Iron Foundry Practice	1
GEZELIUS, R. A. AND BRIGGS, C. W.—Studies on Solidification and Con-	
traction in Steel Castings—II—Free and Hindered Contraction	
of Carbon Cast Steel	449
Hatfield, W. H.—Steel Castings	
Heisserman, R. J.—Selecting Foundry Conveying Equipment	565
Herasymenko, P. and Valenta, E.—Some Problems of the Physical	
Chemistry of Steel Making	21
HEWETT, L. C.—Notes on Refractories for Electric Furnaces Producing	
Special Irons	577
HILLS, R. C A Comparison of Some Wet Methods Used for the	
Fineness Test of Sands and Clays	101
JUNGE, C. H. AND SCHWARTZ, H. A A Note on the Metallography of	
Ferrite in Malleable Cast Iron	94
KEELEY, R. J.—The Use of Charcoal in the Nonferrous Foundry	184
KENNEDY, R. R.—The Effect of Elevated Temperatures on the	
Strength and Dimensional Stability of Certain Aluminum Alloys	
Used in Aircraft	48
Lemoine, R. P.—Cupola High Test Cast Iron	745
Lorig, C. H.—Introduction to Symposium on Deoxidation and Degas-	1 10
ification of Nonferrous Casting Alloys	159
LORENZ, A. W.—Porosity in Leaded Bronze Bushings.	
LORIG, C. H. AND SMITH, C. S.—Effect of Copper in Malleable Iron.	
MacPherran, R. S.—Test Bars	
MOORE, H. F. AND PICCO, J. J.—Fatigue of High Strength Cast	211
Irons	595
PHILLIPS, G. P.—High Chromium Cast Irons.	
I Hilders, G. I.—High Chromium Cast Hous	210

	Page
PHILLIPS, G. P.—Effect of Molding Methods, Bar Diameter and Design of Physical Properties of Test Bars	485
PICCO, J. J. AND MOORE, H. FFatigue Test of High Strength Cast	
Irons	525
PIWOWARSKY, E.—Certainty of Results as the Basis for the Manufac-	
ture of High Test Gray Iron	705
SCHWARTZ, H. A. AND JUNGE, C. H.—A Note on the Metallography of	
Ferrite in Malleable Cast Iron	
Sims, C. E.—Preparation of Steel to Avoid Porosity in Castings	323
SIROVICH, G. AND VANZETTI, G.—Investigation of the Composition of	
Common Cast Iron for Boilers	
SMITH, C. S. AND LORIG, C. H.—Effect of Copper in Malleable Iron	
Spencer, W. H.—Chilling Properties of Cast Iron Stone, R. H.—Modern Equipment Used in Crucible Melting	
Subles, M. F.—Selection of a Suitable Method of Polishing Cast Iron	200
for Microscopic Examination	280
THOMSON, J.—Foundry Maintenance.	
Touceda, E.—Cause of the Incompatibility Occasionally Found Between	000
Elongation and Tensile Strength of Malleable Iron Test Bars	407
VALENTA, E. AND HERASYMENKO, PSome Problems of the Physical	
Chemistry of Steel Making	21
VALTIER, F. AND DIETERT, H. W Flowability of Molding Sand	199
VANZETTI, G. AND SIROVICH, GInvestigation of the Composition of	
Common Cast Iron for Boilers	71
Walls, F. J.—Permanent Mold Castings	427
Ward, L. A.—Deoxidation and Degasification of Yellow Brass	173
Woodward, R. C.—The Mechanics of Porosity in Steel Castings	364

Material as Printed in Bi-monthly "Transactions"

All 1934 Transactions material, as cross-indexed on pages 762 to 770 inclusive, has been printed in the issues of the bi-monthly "Transactions of A.F.A." To find quickly the bi-monthly issue in which any indexed subject appears, refer to the following:

Bi-Monthly Issue	Transactions Pages
November-December	. 1–128
January-February	
March-April	
May-June	
July-August	. 577-704
September-October	. 705–772

